Rising to the top ten transformative projects in Asia and the Pacific: A stakeholder analysis of the community-based carbon sequestration project in Eastern Iran

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Rising to the top ten transformative projects in Asia and the Pacific: A stakeholder analysis of the community-based carbon sequestration project in Eastern Iran

Farshad Amiraslani

School of Geography & Environmental Sciences, Faculty of Life & Health Sciences, Ulster University, Coleraine, BT52 1SA, UK

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ABSTRACT

Stakeholders are individuals and organizations, permanent or on an ad hoc, who are involved or affected by the project's execution or completion. Projects involve various primary and secondary stakeholders with different opinions, objectives and contributions. For any project's success, the interest of the project stakeholders must be understood.

This paper describes and analyses a community-based project selected globally as one of the top 10 developmental projects in Asia and the Pacific in 2016. A diverse range of stakeholders has been involved in this project, and their roles, strengths, and weaknesses, especially from the managerial viewpoints, will be discussed. The best outcomes resulted from the Village Development Groups that could gather local communities from all age and gender groups among stakeholders. We also address the project shortcomings that have hindered the project capacities, namely the project document, the distance between the field and headquarter, and the lack of financial and climatic risk assessment.

In community-based projects, the earlier establishment of managerial stakeholders is pivotal for streamlining the project and introducing it to the local people. Reliance on the local experiences and communities ensures the success of these projects, while repudiating such potentials may lead to the breakdown of a project's objectives and achievements in the long term. The linkages or mismatches between national and international administrative and financial modalities must be considered carefully for international projects.

1. Introduction[1]

The 'Carbon Sequestration in the Desertified Rangelands of Hossein Abbad' Project (Hereafter, CSP) was developed for a few districts across the South Khorasan Province ('the province'), the eastern border of Iran. The project was signed as a joint venture between Iran, Global Environmental Facility (GEF), and the United Nations Development Programme (UNDP) in 2003 (UNDP, 2003). At first, the project was planned to be funded and completed for six years, but it has been refunded and expanded twice due to its successes.

Building on the growing global focuses and concerns on the 'stakeholder analysis' theme as an essential undertaking to be considered for all projects (e.g., Bendtsen et al., 2021; Aaltonen, 2011), this paper will investigate stakeholder analysis and mapping by making a case for the above-mentioned community-based CSP project. There is limited knowledge on the stakeholder analysis and mapping of natural resources management (NRM) projects and the roles that diverse stakeholders play in such projects in developing countries (Reed, 2008). A recent review paper sheds light on the paucity of such research studies. It found that the majority of the stakeholder analyses for environmental projects dominated by the EU (31%), USA (15%) and Australia (15%) (Bendtsen et al., 2021). The Middle East region was only allocated 3 studies (Bendtsen et al., 2021). This research, therefore, intends to fill this existing gap in the literature.

CSP could be regarded as a unique community-based environmental project, and thus, we elaborate the understanding on stakeholders and their roles in this context. CSP became a global success community-based project heralded as one of the top 10 success projects in 2016

E-mail address: f.amiraslani@ulster.ac.uk.

[1] Throughout the text, 'the author's observation' is denoted. The author worked as one of the key stakeholders during the first three years of the Carbon Sequestration Project (CSP) establishment. These observations reflect the author's technical views solely, and by no means, they imply criticism any of the organizations or persons mentioned in this paper. The author will remain one of the advocates and wishers of the CSP successes to improve local communities' livelihood

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(UNDP, 2016). This research explores linkages between the project's successes from the lens of stakeholders' roles and responses.

The paper seeks to address two questions: how local and national constraints can impact modalities of an international project? Moreover, how do external factors influence the project delivery at various stages?

Organizations differ systematically in the modes and processes (Aaltonen, 2011) and, undertaking an international project at a local level faces challenges of which many are not addressed. As such, the paper assesses essential aspects of a multi-stakeholder international project, and we will discuss how such disparities existed in financial agreements of national and international modalities where one contradicted the other in CSP.

Also, this research explains how other external factors could impact the earlier project delivery. For instance, how weak drafting of the project document could impact staff recruitment during the earlier crucial timeframes. Understanding these complexities/challenges would be essential for effective stakeholder management and project performance.

The paper reviews global theories on stakeholder analysis and links the relevancy of CSP to these debates. The involvement of key stakeholders is crucial during the projects' inception phase (Miković et al., 2020). Therefore, the recruitment of stakeholders during the first critical three years of the inception phase after the launching of CSP will be analysed. Finally, this research paper highlights sustainability scenarios threatening such community-based projects amid global climate change and declining financial support. The paper reviews those shortfalls that had affected the project and presents lessons learned and policies suitable for broader applications in the world.

The author served as a National Project Coordination Officer during the first three critical years of the project life cycle ('the inception'). Such personal and field reflections from one of the project's key first stakeholders could contribute to this paper's unique contribution and innovation. To the best of the author's knowledge, this is the first-ever stakeholder analysis and mapping report for an international environmental project in Iran. The lessons learned from CSP can be scaled up and practised elsewhere with similar social and cultural contexts worldwide. When the information, best practices, lessons learned are communicated, performance will be enhanced, and subsequently, this knowledge will enable others to develop additional skills and competencies and sustain their competitive advantage (Renzl, 2008). Many regional and global projects share the relevant human resources, administration, and financial procedures and problems similar to CSP. Therefore, those practitioners, NGOs, and academic scholars involved in the joint-venture Sustainable Development Goals (SDGs) developmental projects in developing countries can benefit from this project's lessons learned (weaknesses and strengths).

Two notions must be clarified here. CSP has encompassed a wide range of activities and events, including the technicality of carbon sequestration reflected elsewhere (e.g., Amiraslani and Dragovich, 2011). This paper will mainly review CSP from the stakeholder analysis viewpoints, from its top leadership downward and stakeholders' variation. This paper also covers only the first three inception years regarding stakeholder management and contributions, and other papers may have covered the broader timeframe of the project afterwards.

2. Stakeholder analysis

2.1. Definition

Freeman's book in 1984: "Strategic Management: A Stakeholder Approach" has provided the foundation of subsequent research and theories (Reed et al., 2009). The stakeholder term was streamlined in the 1990s, and since then, it has become developmental thinking to include various interest groups and beneficiaries (MacArthur, 1997). The World Bank was a pioneer to adopt the term stakeholder in 1993 (MacArthur, 1997).

Stakeholders are defined as "individuals and organizations that are actively involved in the project or whose interest may be affected as a result of project execution or project completion" (cited by Aaltonen, 2011, p.166). For instance, to achieve SDGs, data collaboration is vital and thus, stakeholders are considered to be those individuals, government statistics and planning departments, and business corporations involved in various data management and processes (Thinyane et al., 2018). For those projects funded by the investors of the capital, stakeholders comprise the performing organisation, project team members, suppliers, governmental agencies, and special interest groups (Musawir et al., 2020). Stakeholders could be permanent or on an ad hoc basis, though the latter arrangement can jeopardize long-term viability (Reed et al., 2009). Contributions of stakeholders varied and include administration, financial, logistics, advisory, etc., while stakeholders may negatively impact the project and cause various risks (Eskerod and Larsen, 2018). Projects involve a wide range of internal (primary) and external (secondary) stakeholders with different (conflicting) opinions and objectives (Rose et al., 2018; Aaltonen, 2011). Therefore, decision-making and change situations when multiple stakeholders are involved would always be challenging (Lannon and Walsh, 2020). As such, for any project's success, the interest and demands of the project stakeholders must be considered and their expectations shared and discussed (Lannon and Walsh, 2020; Aaltonen, 2011; Jepsen and Eskerod, 2009).

The literature review of stakeholder analysis has revealed a diverse range of viewpoints and case studies worldwide. Stakeholders have been assessed from various aspects such as their engagement, impacts, contributions, expectations, trust, rewards, and visibility (e.g., Cerić et al., 2021; Urton and Murray, 2021). Stakeholder analysis has applications in different disciplines such as policy, management, and project implementation (Varvasovszky and Brugha, 2000; Reed et al., 2009; Reed, 2008).

Stakeholder analysis is a crucial undertaking (Aaltonen, 2011; Varvasovszky and Brugha, 2000; Jepsen and Eskerod, 2009; Missonier and Loufrani-Fedida, 2014) and a longitudinal process (Missonier and Loufrani-Fedida, 2014), as the project teams are under a steady reformation (MÜller et al., 2018). It theorises relationships between different social groups engaged in a common enterprise (Rose et al., 2018). Understanding of this process can help the projects become successful during and after the project completion (Varvasovszky and Brugha, 2000) by anticipating problems and manoeuvring to tackle them (Jepsen and Eskerod, 2009).

2.2. Stakeholders and natural resources management projects

Started in the 1970s, the donor-funded poverty reduction, developmental activities, people participation, and sustainability gathered momentum and interests globally (MacArthur, 1997). The 1972 Stockholm UN Conference on the Human Environment highlighted the importance of the integration of environmental management with economic and social development to ensure a future for civilizations (Colby, 1989). Heading toward the theory of change approach for the projects, as a dynamic result-based approach, developmental efforts have accentuated the generation of a particular change to reflect a systematic understanding of development (Lannon and Walsh, 2020). Such a new approach to development was a global call for building local coalitions and mobilising local resources (Lannon and Walsh, 2020).

The integration of 'environmental management' with 'development' is a debated challenge for governments (Vogler and Macey, 2017; Colby, 1989). Any amalgamation of these two separate entities necessitates considering unrelated factors and uncertainties such as climatic variations, long-term impacts of the projects, consensus of impacted beneficiaries and the roles of project stakeholders. Usually, "environmental, natural resource, and conservation plans or decisions are complicated and involve many different people with differing opinions and values" (Vogler and Macey, 2017, p.5). In such environmental projects,

coalitions and cooperation between government agencies, business actors, and civil society is much more noticeable (e.g., Pattberg and Widerberg, 2016). Such multistakeholder partnerships emphasise their flexible, adaptive, and decentralised nature (Pattberg and Widerberg, 2016). Such features ensure that all stakeholders are embedded in the total environment of the systems being planned for and developing future environmental management strategies and thus, earmark the core of environmental management and planning (Colby, 1989).

As this research focuses on one of the Natural Resources Management projects, we discuss their distinctive structural and stakeholder features here. Regarding the developmental and NRM projects, stakeholder analysis has focused on "understanding power dynamics and enhancing the transparency and equity of decision-making" (Reed et al., 2009, p.1935). NRM projects are complex, uncertain (e.g., climatic uncertainties, extreme events) and not well understood, requiring managers to make judgments primarily based on the average conditions (Iftekhar and Pannell, 2015; Walker et al., 2010).

Unlike mega-projects with large numbers of stakeholders (Ninan et al., 2021), NRM projects do not normally encompass pools of diverse stakeholders. However, even such limited personnel have a substantial impact on project delivery. Value judgments by legitimate decision makers are needed (Walker et al., 2010) and legitimacy acts as a motivation for compliance (Oyanedel et al., 2020).

In NRM projects, differentiation between users or stakeholders and their capacities must become clear (Nunan, 2018). The lack of coordination and confusion amongst stakeholders due to different management approaches in NRM projects (Nunan, 2018) may hamper project implementation.

In addition, NRM projects face a broader challenge of sustainability, as unlike other typical projects, NRM projects suffer from climate and plague impacts that are uncontrollable and unplanned (Rigby et al., 2000). Therefore, strengthening local stakeholders and their relationships may guarantee much earlier and quicker responses to keep these impacts in check after the project completion.

In many cases, the funding body and capital investors are normally the primary beneficiaries of the project (Musawir et al., 2020) while in NRM projects which are funded by public funds and international donors, local communities are deemed to be benefitted the most. As such, the role of local stakeholders become more prominent in NRM projects (Haddaway et al., 2017).

3. Research data and methodology

3.1. The study area: Socio-economic status

The area covered by the CSP ('the site') is 148,000 ha, comprising of 30 sparse villages (UNDP, 2003). The area and surrounding rangelands ('field') are adjacent to Afghanistan borders, and include rangelands severely degraded by human factors such as overgrazing and excessive fuelwood gathering (UNDP, 2003).

At the national level, a severe drought in 1999 followed by extreme drought in 2000, the worst in 30 years, culminated in disastrous impacts in 18 provinces covering 37 million people (50% of that time) (UN, 2000). The drought caused agricultural losses of 2.8 million tons in wheat, 280,000 tons in barley, and the death of 800,000 small animals and many more (UN, 2000).

CSP was initially started based on some local communities' concerns in a meeting with FRWO[2] staff in 1997 (UNDP, 2003). They propounded an increased trend in land degradation and droughts, which caused the gradual social disintegration of local rural communities, most importantly, poverty and unemployment. Those earlier meetings were followed by several other meetings with FRWO staff, which led to the final commitment from the FRWO to rehabilitate 9000 ha of degraded rangelands (UNDP, 2003). That local concern coincided with a global call for developing environmental projects from the GEF. Therefore, the Iran government recruited an international consultant to develop a funding proposal for a medium-size project. Based on the field visits, interviews, and desk review, a document was prepared, submitted, and ratified by the GEF for implementation in Iran.

In the text of the first project document, it had mentioned that "there is a serious and urgent need to rehabilitate this degraded rangeland area in order to provide forage for the animals and to reduce the damage caused by wind erosion through re-establishing perennial plants" (UNDP, 2003). Also, the lack of expertise at the local level was further highlighted: "The local people are well aware of the problems, but they do not have sufficient expertise, suitable seeds or funds to tackle their sustainable rural development" (UNDP, 2003).

The early project document was drafted during the 2002–03 period when the author became involved, and the project document was finally ratified in 2003. The total budget approved for the first six years period was $1,709,939 comprised of $1,379,939 cash and $330,000 in-kind financial contributions (UNDP, 2003). The cash contribution was shared between Iran and GEF (about 50% each), while Iran also committed the in-kind contribution (e.g., secondment staff).

The main project document reviews the situations on the ground and proposed annual workplans, objectives and indicators, outputs, and 10 Annexes to describe a diverse range of essential project matters (from financial arrangements to staff recruitment) (Table 1). It was composed of five components, each with different activities. The components consist of community-based management arrangements, the establishment of co-management plans, Implementation of co-management plans/agreements, social communication initiatives, and monitoring and assessment of rehabilitation (UNDP, 2003).

3.2. CSP inception phase

The project inception phase, spanning the early three years, was a crucial timeframe like other undertakings worldwide. Understanding the gradual foundation and institution of CSP helps the international readers divert their mentalities regarding other typically funded projects and operated in the developed world.

The earlier months were both crucial and challenging, especially for two reasons: communication and financial matters. Regarding the communication, the first challenges included bilateral contacts between the government staff and the local communities, establishing community participation, publicizing project goals, and attracting different gender and age groups (Amiraslani and Dragovich, 2010). These bottlenecks were resolved through a series of meetings, field visits, negotiations, etc. Also, the local CSP team decided to recruit local facilitators, notably women, to connect with local communities. Whether culturally or linguistically, similar stakeholders have mutual understanding and better communicate tacit and complex information (Prell et al., 2009). With possessing knowledge of the local language, culture and customs, these facilitators were successfully served as a bridge between local

Table 1
One of the selected CSP's objective and its associated indicators and verifiers (UNDP, 2003).

Development Objective	Indicators	Verifiers
The annual rate of carbon storage in plants/trees and soil is increased in the degraded land areas in Iran.	A cumulative amount of up to 18,000 tons (depending on the area's potential to sequester carbon) carbon stored both above and below the ground in the rehabilitated areas under the project are realized by mid-2008.	● Documentation of annual hectarage of rehabilitated land and number of trees/plants planted by the FRWO and the villagers. ● Documentation of estimates of annual carbon sequestration.

[2] FRWO: Forest, Rangelands and Watershed Management Organisation

people and the project team (Amiraslani and Dragovich, 2010).

The financial arrangement of CSP was complicated in the sense that both Iran and international partners shared the costs (the cost-sharing modality). Furthermore, Iran committed the in-Kind contributions to the project in the form of staff secondment (including staffs in Tehran headquarter and, in the field), free office spaces, logistical facilities, office utilities and so on. In addition to the difficulties in international financial transactions, the major challenge arose from the complex rules of the Iran budgeting that was headed by the Planning and Management Organization (PMO). For international readers, it must be mentioned that Iran financial system is a centralized system managed by PMO, which decides on all national revenues and expenditures based on an annual budget proposed by the government and approved by the Parliament. The approved budget will be then distributed among ministries and provinces. So, referring to CSP, Iran's national laws and regulations did not permit any non-domestic financial contribution used directly by the CSP team without regular authorization and validation. All allocations of CSP national budgets were approved and registered in the previous financial budget year. Also, CSP was not allowed to open a joint bank account between the Iran government and international partners. All in all, these bureaucratic complexities consumed time and energy to prepare and justify various financial documents while, in some instances, incapacitated other required efforts and decisions (author's observation).

3.3. Data: Targeted research group

"The most basic stakeholder analysis simply involves the identification of people, groups, and institutions that have some interest in a project or will be affected by it" (Vogler and Macey, 2017, p.7). Our research was aimed at stakeholder analysis and mapping to identify actors who had interests or were involved in CSP during the first three years of the project inception phase. Accordingly, we defined and included almost all key CSP stakeholders involved in a diverse range of activities, including early project planning, public agents, CSP top managers, field staff, local contractors, and international funders. Notably, the geographical locations of these stakeholders were different as some worked remotely from Tehran and others in the same province, including local villagers. Moreover, not all stakeholders joined the project simultaneously, as many roles evolved later, and not all had high stakes in case of project failures. As one of the pivotal stakeholders, local communities could benefit from the project successes while were not financially impacted by failures if CSP had not achieved those targeted goals. These local communities could be regarded as "Hidden stakeholders" defined by (Vogler and Macey 2017, p. 6) as "those whose incomes and/or livelihoods depend on the use of a natural resource, but whose participation in public stakeholder decisions is not normally considered". On the other hand, the government's financial contribution during the first years mainly was the in-kind (non-cash) contribution, so the public stakeholders from involved organizations were not put in a precarious situation if no target was materialised.

Such considerations in this research resulted in a complete list of numerous stakeholders of different social and economic statuses and capacities (e.g., ages, gender, knowledge and resources). Such diverse socio-economic backgrounds provided us with a distinctive overview of roles and ensured that our targeted groups were not selected for a specific reason, thus reducing biased assumptions and analysis. Similar to our study, such inclusive groups were selected for assessing stakeholders for governing social forest values in Sweden (Sténs et al., 2016) and Environmental Impact Assessment in Vietnam (Clarke and Vu, 2021).

3.4. Research methodology

We employed one of the stakeholder analysis techniques, which involves a table to aggregate information on the different stakeholders (Vogler and Macey, 2017). As such, we collated stakeholders (as defined in the previous sub-section) in one table with their relevant involvement and contribution. Our research methodology conforms with such types of research on stakeholder analyses of environmental projects.

This evidence-based explanatory research describes actual events during the first three years of the CSP evolvement. It is based on the project document (UNDP, 2003), articles in Persian language (e.g., Nematolahi et al., 2018), articles in English (Amiraslani and Dragovich, 2010), annual executive reports (unpublished reports), field survey reports and personal accounts. Comparative scientific literature, in both Persian and English, also supported these descriptions and evaluations (e.g., Nematolahi et al., 2018). Reviewing relevant papers, secondary literature (54%) was found as one of the most used methods for gaining information and data collection in such studies (Bendtsen et al., 2021).

Crucially, as the author was involved in the earlier phase of CSP development, unplanned trajectories to recruit and involve stakeholders are narrated here. Moreover, the author worked within the same geographical area of the project, which could be value-added. A review paper has recently found out that stakeholder analyses are often conducted by authors from other geographical areas than the case study, neglecting marginalized stakeholders (Bendtsen et al., 2021).

Many of the author's first-hand field observations have not been reflected or published elsewhere, nor his records, notes, and memories collated during the field visits and top-level meetings. For the core issue of stakeholder analysis for a project with such a limited spatial (few rural districts) and time scale (early three years), there would be no substantial number of stakeholders involved to be used for statistical analysis. Instead, the author has tried to narrate those unaccounted events on the ground and in the project office with broader and practical applications for other global community-based projects. Such field-based personal accounts are not typically mentioned in the experimental research publications where there is no adequate access to unbiased data and information.

4. Results

This section demonstrates the findings related to the classification of stakeholders and includes staff recruitment, formation of various stakeholders, and communication initiatives with local stakeholders (including marginalized groups).

4.1. Unfolding CSP stakeholders

Here, based on the literature review in this paper's preamble and the author's observations, those key CSP project stakeholders are listed in Table 2.

As an international project, CSP management's scope and style have been different from those of national ones, especially regarding the recruitment of personnel. The prepared CSP document demonstrated that human resource recruitment should follow specific rules and procedures from advertisement to recruitment steps. The first project document listed the job requirements and the credentials of the incumbents in the annexes.

Here, we discuss the most influential stakeholders of CSP:

National Project Director (NPD). CSP's managerial arrangement has been a pivotal element of the CSP success. According to the project document, a tier-based managerial arrangement, including three specific managerial tiers, were considered (UNDP, 2003). As a focal point and decision-making authority, NPD had to be a governmental manager with a specific role to connect the project between the government and the international partner(s). This notion of connection to the government implies both administrative and financial aspects, which were very pertinent to achieving the project's targets. In Particular, the financial aspect was problematic and time-consuming, and the role of NPD was crucial to negotiate with other national organizations and make decisive actions in the field. For CSP, the then Head of the Bureau of Desert Affairs was designated by FRWO to spearhead the overall project

Table 2
List of key CSP stakeholders during the first three years of the project inception (2003–2005).

Stakeholder	Contributions	Tasks	Impediments
Organization level			
FRWO (Headquarter)	Secondment staff, logistics, national coordination, cross-sectoral coordination	Approval (finance reports, procurement, training, workplans and documentation)	Lack of sectoral coordination, lack of experience in international developmental projects
FRWO (Provincial Bureau)	Local administration, office	Annual and quarterly workplans, project documentation, local coordination, local workforce and contracts	Lack of experience of any national and international projects, lack of English language competency, low level of technical expertise
UNDP/GEF	Financial resources	Administrating international financial share, national and international liaison, and coordination	Conformity with local financial rules
PMO	Financial resources	Administrating Iran financial share	Lack of experience in international projects, prevalence of 'top-down approach'
Village Development Groups	Beneficiaries, field actors, contactors, trainees	Involved in all day-to-day developmental activities, including farming, construction, and logistics	Low interests in team working, highly sensitive to land tenure issues, low level of literacy, remoteness and inaccessibility of communities across the project area
Steering Committee	Advisory	Approval, recommendation, sectoral coordination	Lack of motivation and coordination
Local University	Consultancy	Monitoring and evaluation	
Intra-provincial consultancy firm	Consultancy	Baseline study	Limited knowledge of local social, ecological and climatic contexts
Individual			
NPD	Project manager (national level)	Approval, staff recruitment and appointment, high-level project representation	Lack of experience in international projects; resided far from the project site
NPM	Project manager (field level)	Day-to-day field management, local financial mobilisation, project documentation, staff coordination, representation in provincial meetings	Lack of experience in international projects
Chief Technical Advisor	Advisory	Expertise, project documentation	Low presence in the field

Sources: UNDP, 2003; the author's observation.

management.

National Project Manager (NPM). Another key managerial person was NPM. According to the project document (UNDP, 2003), NPM should possess credentials that included extensive community-based experience and complete familiarity with participatory processes and approaches. The first NPM was elected during the critical inception period and based on a list of qualifications and competencies, including work experience, education, personality, English language communication, etc. Besides, he was admired by top managers of FRWO headquarter in Tehran and the province (the author's observation). According to the project document, s/he will manage day-to-day field activities. One note must be highlighted here that the 1000 km distance between Tehran (where NPD was based) and the CSP site could make any distant managerial arrangement difficult, if not impossible. So, NPM filled this distance void. To expedite managerial arrangements, NPM was also given unrestricted power to make decisions in the field. Of course, this freedom precluded non-local financial expenditures (e.g., missions outside the province, international travels). This liberty in financial decision-making was essential because some of the CSP components deal with the live entities (livestock and plants). Any defer in making decisions for delivering on-time project operations (e.g., seedling plantation) could cost hugely in finance, administration, and time. The area's harsh dry climate only offered the CSP field-based team a limited timeframe to decide to plant seedlings and seeds for benefiting a low amount of rainfall water.

Steering Committee (SC). The project managerial arrangement mandated the CSP to form a cross-sectoral group comprising top-level managerial authorities from other governmental sectors pertinent to the project's goals and activities at the national level (e.g., various ministries); instead, their representative was nominated to attend with no resolute decision-making power (the author's observation). The SC's meetings were supposed to be convened regularly with robust solutions and plan to be implemented in the field (UNDP, 2003). On the contrary, the meetings were turned into a series of ineffective, irregular, indecisive, and informal gatherings (the author's observation). The problem could be attributed to the lack of organisational or personal motivations. Such an issue could be tackled by motivating and incentivising the stakeholders (e.g., direct monetary payment) or engaging them by improving access to the project results and processes (Jepsen and Eskerod, 2009).

Chief Technical Advisor. The project document mandated to recruit of an international Chief Technical Advisor for the first two years of the project life cycle (UNDP, 2003). Therefore, this person was recruited to provide technical knowledge and practices on the project's participatory management, a new concept to the country. We must highlight associated logistical and financial issues related to such international recruitment, including his visa, payments in foreign currency, English communications with Iranian team members, accommodation, etc. Also, he could not leave the provincial office without prior permission for security reasons imposed by the international partner's security rules. The CSP managerial team complained about this limitation as he could not regularly visit the villages to provide necessary guidance in the field (the author's observation).

Local contractors. CSP successfully recruited a diverse range of local staff to be involved in office administration, logistics, and field works. The recruitment was not complicated as they entailed a limited timeframe and financial commitment jobs. Moreover, the project outsourced many activities to the local firms and institutes for achieving higher labour efficiency, cost efficiency, transparency, and time saving. For instance, seasonal seedling plantation, watering, and local procurement orders were outsourced through the local bids. After the first three years, many more jobs were allotted to the private sectors (e.g., trainings, marketing). Selected specialized duties and jobs beyond the capacity of the province were also outsourced. For instance, the project document mandated an early technical baseline survey for collating and mapping social, economic, and ecological data before the commencement of the project. Also, a mid-term monitoring and evaluation activity was proposed in the project document to assess the project's achievements and progress (UNDP, 2003). Both sub-projects were successfully outsourced to a consultancy firm (Tehran-based) and a local University, respectively.

Village Development Groups (VDGs): It is safe to say that VDGs proved to be the most efficient and well-organized CSP's stakeholders. They have been real owners and beneficiaries of the project. The essence

of these community-based formations was evolved around the concept of "nothing for us, without us" (UNDP, 2016), implying the highlighted roles and responsibilities of local communities to tackle their environmental challenges, poverty, and livelihood. The project set up a micro-credit system to offer highly subsidized loans to improve their livelihoods (UNDP, 2016). A total of 23 VDGs, comprising 13 villages and 409 families, were formed during the first three years. Until 2017, it rose to 63 VDGs, creating 577 permanent job opportunities and allocating 2400 loans through their micro-credit system (Tehran Times, 2021).

4.2. Involvement of marginalized stakeholders

The global literature on stakeholder analysis considers marginal groups' empowerment (e.g., women) to include those groups who are underprivileged and socially disadvantaged and lack access to networks (Reed et al., 2009; Reed, 2008). In CSP, the women groups were among the most underprivileged groups before starting the project in 2003. They were illiterate with no income-generating jobs and a low appearance in their local communities. The introduction of CSP to the area instigated a dramatic change that was unprecedented within the area and beyond, as is reiterated by one of the local women from the village of Hassan Kolangi: "*My family was about to migrate to the city nearby in search of a living, but we now have enough income to stay in our own village,*" (UNDP, 2016, p.15). She refers to an income supported by a loan from the CSP scheme to set up a small herbal extract workshop.

Since the beginning of CSP in 2003, a diverse range of community-based activities and initiatives have been run, several cooperatives and women groups formed, infrastructure developed, and new ideas expanded to other areas and provinces across Iran. A socio-economic survey of the project site conducted spanning three years (2006–2008) revealed an improvement in some human development indicators (Fig. 1).

Staff training and field visits to other national and international destinations were the positive activities. Titled as the 'capacity-building', UNDP considers it a long-term process and defines it as "the process through which individuals, organizations and societies obtain, strengthen and maintain the capabilities to set and achieve their own development objectives over time" (UNDP, 2015, p.4).

Another positive aspect of CSP has been the project documentation implemented by the project stakeholders. This was critical, especially during the inception phase when there was no such collection of knowledge of participatory management or similar project in the country. As part of day-to-day workplans, almost all activities were documented and archived. These included brochures, books, booklets, pamphlets, and so on in Persian and English. Generally, knowledge documentation is vital for the transferability of knowledge, and collective knowledge plays a fundamental role in determining effectiveness (Renzl, 2008).

5. Discussion

5.1. Stakeholder analysis of CSP

International development projects, as in our CSP case, include more diverse stakeholders such as consultants, policymakers, international donors, local authorities and NGOs (Lannon and Walsh, 2020). The first CSP project document indirectly considers stakeholders at five levels of sub-watershed, local, national, provincial, and international (UNDP, 2003). The project document also defines 'Potential stakeholders' include communities, groups or individuals actually or potentially affected by the management decisions, historic occupants (e.g., indigenous communities or regular transients), local associations or NGOs …., and various governmental actors and ministerial departments" (UNDP, 2003). As another activity, the CSP project document devolves certain roles and responsibilities (e.g., advisory, executive or decision-making role) to potential stakeholders while asking them to arrive at an internal consensus on the values, interests and concerns (UNDP, 2003).

Identification and recruitment The early stakeholder engagement in the project preparation phase is pivotal (Miković et al., 2020; Aaltonen, 2011). In the previous section, we demonstrated the indicators used for identifying and recruiting the key stakeholders during the critical first three years of the CSP establishment. We showed how CSP could swiftly recruit NPM as the essential person for managing day-to-day activities in the field. Later, CSP needed a technical person (CTA) for the earlier years, which was implemented through a competitive process. Also, academic members of the local university were contracted to carry out a specialized ecological baseline study within the first three years of CSP. These processes align with the global literature that different technical skills at different project implementation points are required in a short period (MÜller et al., 2018).

Leadership As one of the key stakeholders in developmental and NRM projects, leadership is highlighted (Iftekhar and Pannell, 2015; Walker et al., 2010). Leadership is a "catalyst for achieving, improving, and sustaining development objectives" (UNDP, 2015, p.9) which is never exercised in isolation (UNDP, 2015). Such managerial verticality was proved to be effective for CSP. As a manager appointed by FRWO, NPD could crucially resolve administrative and financial problems due

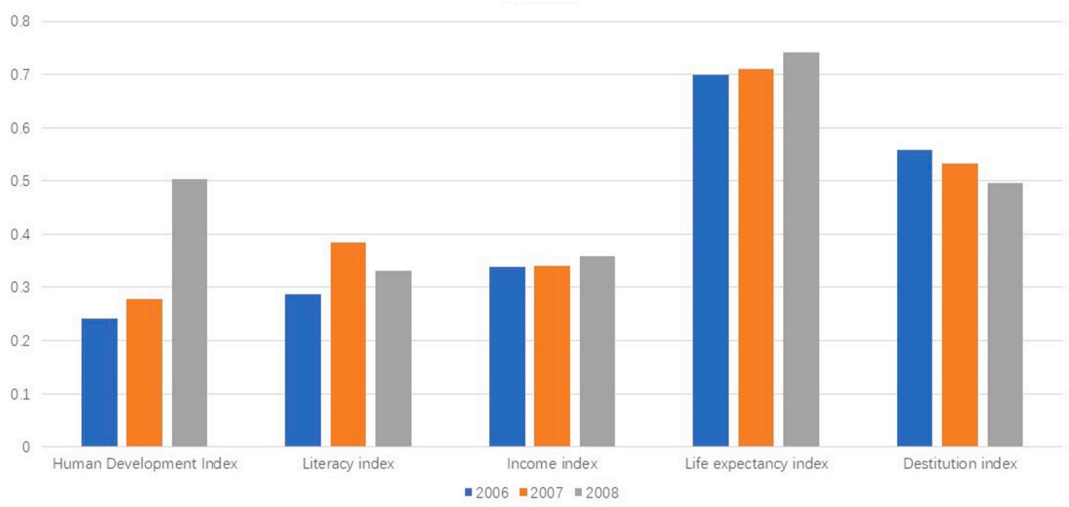

Fig. 1. Selected human development indicators measured by a university team in the CSP site (generated based on data published by a CSP booklet in Persian).

to establishing connections with counterparts in other public sectors. Also, we highlighted the influential role of NPM as a functional managerial staff who dealt with the day-to-day activities in the field. His admired professional relationship with various local, provincial, and national team members guaranteed the earlier smooth establishment and development of CSP. In stakeholder analysis, both vertical and horizontal leadership are emphasized (MÜller et al., 2018).

Empowered local stakeholders CSP focused on globally accepted notion of 'stakeholder empowerment' (Aaltonen, 2011; Reed et al., 2009) to provide a platform for those stakeholders without social networks access (Reed et al., 2009). In this regard, we determined women groups' critical roles in our project, who have ultimately made substantial positive impacts on the project successes. In 1981, Checkland suggested that "whoever owns a problem should be a co-owner of the process to solve it" (Reed et al., 2009, p.1934). This statement exactly portrays the actual situation that was experienced for CSP. Those earlier local communities who suffered from land degradation and made efforts to underline the problem through legitimate avenues became the subsequent beneficiaries and critical stakeholders of rehabilitation processes. On a broader scale, a recent paper has called for establishing a global platform in which rural communities could raise their concerns and prepare themselves for the uncertain future (Amiraslani, 2021).

Steering Committee Overall, it should be noted that, despite the mentioned weaknesses (Table 2), none of those stakeholders listed had opposing views on the delivery of CSP objectives and targets. We mentioned earlier that Steering Committee was not a successful decision-making structure, but they did not display any negative behaviours or actions against CSP (the author's observation). Seemingly, the role of the steering committee or board has not been prominent elsewhere. Another research conducted to assess public projects in Norway found that many institutions resembled advisory groups and project reference groups rather than real steering groups (Volden and Andersen, 2018).

An overall stakeholder analysis of CSP indicates that both direct associated project stakeholders (e.g., FRWO, NPD) and indirect members (e.g., MPO) collaborated well in planning and achieving the goals during the inception phase. As a remarkable achievement, those earlier marginalized and uneducated local people (e.g., women) have gradually formed VDGs and become the primary stakeholders.

5.2. External parameters affecting the performance of CSP stakeholders

International development projects face pressures from uncertain and complicated stakeholder contexts (Aaltonen, 2011). Such uncertainties for CSP are accentuated here, as two different national and international viewpoints and settings regarding the stakeholder arrangements have been in place since the beginning.

CSP was developed mainly for addressing land degradation and carbon sequestration by conceptualizing and institutionalizing the participatory NRM. We have already reviewed those key stakeholders and their positive/negative impacts on the overall success of CSP. Besides, there were various external factors with negative impacts on the overall performance of stakeholders. Known as the 'planning fallacy', these bottlenecks sometimes result from over-optimistic or wrong judgments on the expected benefits, completion time, and costs while leading to the failure to implement the project in due time (Iftekhar and Pannell, 2015).

The early months of CSP, like other national and global ones, were complex and confusing. The earlier steps could not be accomplished according to the proposed plans mainly due to the complexity of various intertwined obstacles outlined below (the author's observation).

Project Document The first shortcoming was related to the project document prepared by an international consultant with no proper knowledge of the area and climatic realities. Under one of the proposed activities ('Identification of Project Stakeholders'), the document asks the inception team to identify "communities, social groups and individuals who possess a direct, significant and specific stake in the identified NRM units" (UNDP, 2003, p.16). However, it does not provide any clear methodology to *identify* stakeholders, though it mentions: "A systematic stakeholder analysis will determine all the parties" (UNDP, 2003, p. 40). Confusingly, adjectives such as '*governmental, local, sub-watershed-wide, direct, potential*' are extensively used preceding the term 'stakeholder' without providing any definitions or responsibility defined in the document. In the end, there is no exact boundary to separate each stakeholder and their associated roles. The project document also clearly considers only those stakeholders from the local communities: "The crucial stakeholders in this project are the local people in the project areas" (UNDP, 2003, p.40). It implies as if the project did not need any external stakeholder beyond the project area.

The project document underestimated the realities of climatic phenomena (e.g., droughts) or exaggerated soil capacities (e.g., carbon sequestration rate) of drylands. Also, many sections in the project document did not appropriately address essential issues such as risks, sustainability, and monitoring. On a broader scale, projects' sustainability is still debatable, challenging and fragmented after 25 years (Sabini et al., 2019).

Financial Arrangements Another failure of the first project document was that many vital topics were incorporated as 'annexes' but not in the main text. Such annexes are not normally reviewed by the project teams or assumed read by others, which it could lead to misconception and misunderstanding. Such a problem happened for the CSP's financial arrangements, as we had described it earlier. Also, the lack of coherence financial rules and international financial modalities, unknown to Iran at that time, hindered the early progress of CSP. The unclear financial guidelines and procedures mentioned by the international partner in the CSP document were not supportive either. Despite these facts, the international donors' accountability and time management made the issues less problematic for CSP (the author's observation).

Spatial Distance Globally, the geographic separation between stakeholders is regarded as one of the characteristics of the NRM and developmental projects (Lannon and Walsh, 2020). In CSP, a long-distance existed between the NPD office (Tehran) with the NPM and others involved in the project site, detaching face-to-face talks and meetings. Although the establishment of email communication filled such a geographic separation void, many back-and-forth daily communication exchanges and challengeable meetings consumed the project's vital energy and time. At the field level, the internationally recruited consultant's minimal appearance in the project site slowed the functionality of the field works and progress.

Poor Risk assessment The first international consultant who prepared the project document was not aware of the area's social and ecological factors and had limited perspectives to resolve risks if they happened. The allocation of only a few days for his field visit during the project proposal's preparation was not certainly enough for him to grasp the realities on the ground. For instance, the project document had set out a sub-section under 'risks' to include eight risks associated with the project. Half of the risk checklist was attributed to human resources and a half to natural risks (fire, rainfall, seed, plantation). The risks were treated superficially in the project document, and no clear basis was found for this short-sight list. For instance, as one of the predicted risks, the project document considers 'Low rainfall in some years and describes its risk likelihood as 'moderate' and recommends 'species choice and additional watering should overcome this factor' (UNDP, 2003). It was simply a mistake in the document not to consider regular and frequent drought events and more practical solutions. It is true that risks are normally ignored until they realized (Aaltonen, 2011).

5.3. CSP, Iran and CO_2 emission

As we explained earlier, CSP's first goal was to enhance carbon sequestration in soils and vegetation by replanting and rehabilitating degraded rangelands through implementing participatory rangeland

management plans. The first project document had estimated that about 15.5 tonnes of carbon per ha would be sequestered after 20 years of CSP implementation (UNDP, 2003). This atmospheric CO2 absorption has been the fundamental scientific basis for global initiatives to encourage sequester carbon in soils (Rumpel et al., 2018, 2020).

One of the long-term solutions for reducing the atmospheric CO_2 level is to absorb it through the most effective natural biological systems, i.e., plants, through a so-called photosynthesis process. In non-technical terminology, photosynthesis is a biological-chemical process in which plants consume CO_2, water, and hydrocarbons and convert them into fruits, flowers, branches, etc. Plants consume about one-third of the CO_2 that humans produce (Rumpel et al., 2018).

Like many other developing countries, Iran has experienced unprecedented population growth, urbanization, and industrialization over the past decades while facing climate change (Amiraslani and Caiserman, 2018). These phenomena' ramifications in terms of environmental impacts have been deforestation, land degradation, land subsidence, declining underground water, and increasing the level of CO2 emission (Amiraslani and Dragovich, 2010, 2013). Iran has embarked on anti-desertification programs at the national level, including afforestation, contributing equivalent to about 3.75% of its annual GDP over the last 50 years (Amiraslani et al., 2018).

Fig. 2 illustrates the per capita CO_2 (how much CO_2 does the average person emit) for Iran and its neighbouring country, Iraq. It shows an increasing trend of CO_2 in both countries, corresponding to their increased population and industrialization, especially since the 1990s for Iran. A 14-year study revealed a direct correlation between CO_2 emission and economic growth in Iran (Yousefi-Sahzabi et al., 2011). Power generation followed by transportation were identified as the highest emission-intensive sectors in Iran (Yousefi-Sahzabi et al., 2011).

5.4. Uncertainty scenarios for CSP

The CSP's success has undoubtedly rooted in the open-minded thinking and swift actions of the first managerial staff and the comprehensiveness of the approaches chosen for mutual dialogues and negotiations with local people since the commencement (the author's observation). Also, the successes have resulted from the dedication of local communities as the primary beneficiaries and stakeholders.

However, sustainability would pose a significant challenge for CSP, though the matter has not paid adequately so far. In the long-term, the critical premise is to take care of the project's infrastructure and delivery by the local communities after the formal ending of the project term. A strong publicly funded agreement has been operated which has supported various developmental activities even during the frequent unfavourable climatic events (i.e., droughts).

Also, another question relates to the durability of the overall CSP's concept (participatory management) among stakeholders. The current VDGs have collaborated well to address their surrounding environmental challenges, but there would be no guarantee that this local partnership will remain intact forever. As the project has not implemented any risk assessment undertaking, such a lack of cooperation and rising conflicts among shareholders and beneficiaries, if it happened, could terminate the project in an unpredicted way.

From the climatic perspective, as the past drought events had occurred (UN, 2000) and various future climate change scenarios have been predicted for Iran (e.g., Amiraslani and Caiserman, 2020), the project site must become more prepared. These climatic impacts could be translated as a predictable drier climate featured by less rainfall and higher evaporation. For CSP, this will endanger the vitality of vegetation, livestock, and water availability. In particular, the project will be no longer able, financially and technically, to address them if the government decides to stop supporting them.

Lack of information and resources preclude project managers to decide timely and adequately (Jepsen and Eskerod, 2009). Resilience is the ability of a system to sustain and thrive in the face of variations (Naderpajouh et al., 2020) (e.g., droughts in our project), and resilient systems are learning systems (Walker et al., 2010). Resilience means 'the ability of a system to perform under a variety of conditions including disruptions and shocks' (Naderpajouh et al., 2020). Earlier, we showed many risks associated with CSP (e.g., droughts) that were not addressed well. For CSP, given the accumulation of almost two decades of information and experiences collated, more resiliency is expected for the future.

6. Conclusion

The CSP's success was highlighted as a value-added and a timely discussion to the 2030 Agenda for Sustainable Development. It was underlined here as more countries have targeted the 17 SDGs (UN,

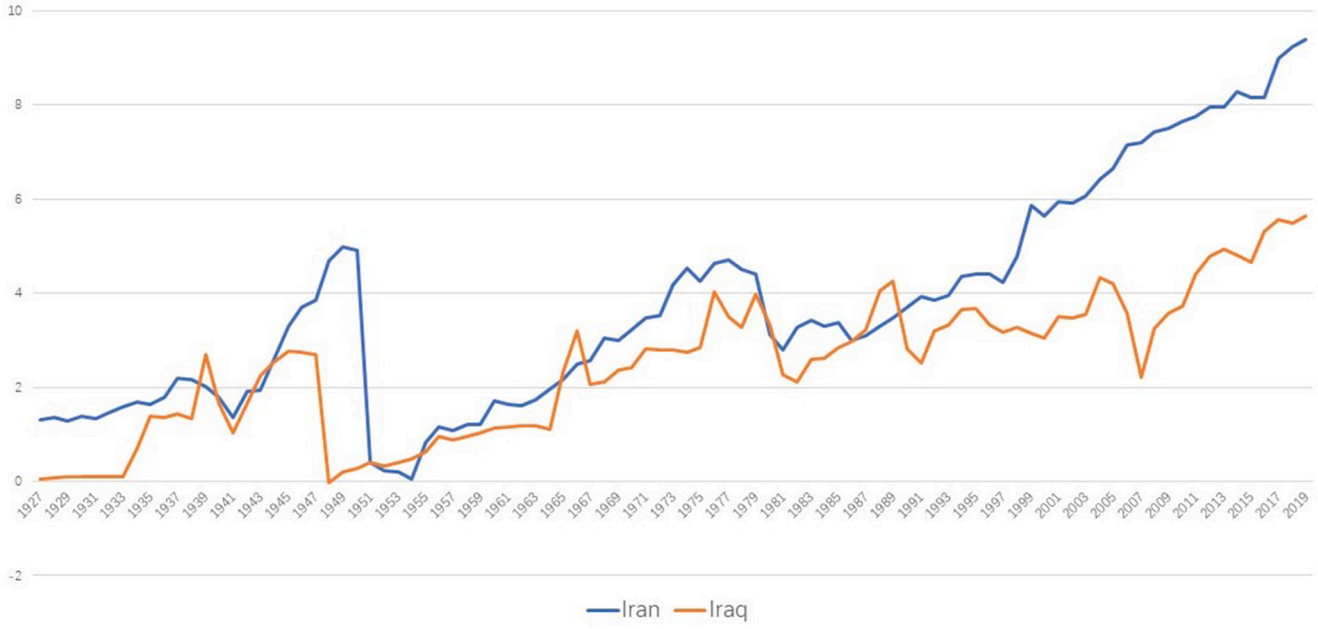

Fig. 2. The CO_2 per capita for Iran and Iraq (prepared based on raw data acquired from Ourworldindata, 2021).

2021). CSP addresses several SDGs (1 'no poverty', 2′ zero hunger', 5 'gender equity', 13 'climate action', 15′ life on land', 17′ partnerships for the goal'). For example, the World's carbon emission reduction commitments in Paris in 2015 (SDG 13) necessitate the on-the-ground role models for achieving the proposed ambitious targets. CSP has gained an accolade reputation as a 'transformative' developmental project with 'remarkable strides' as one of the top ten Asia and Pacific projects in 2016 (UNDP, 2016). It was a sensible timespan in reviewing the CSP's lessons learned.

This research paper provided additional knowledge concerning stakeholder analysis of environmental projects for the Middle East region landmarked with the lowest number of such studies (Bendtsen et al., 2021). We reviewed this successful NRM project based on diverse information, documents, scientific theories, and personal observations. The project started once as a small-scale typical rangeland rehabilitation initiative in one province but has been expanded to other provinces across the country. It was not the project area that was expanded. Relatively its community-based NRM concept, lessons learned, novel ideas, and its prism of triumph for reliance on the local women have been transferred.

Selecting stakeholders for participatory processes is challenging (Prell et al., 2009) as stakeholders could be permanent or ad hoc, while stakeholders' contributions varied (Eskerod and Larsen, 2018). We revealed that due to the successes of earlier managerial stakeholders in streamlining the project concept with the local people's livelihood, CSP has survived and been extended, both spatially and temporally.

Collaboration is an essential factor in project success (Urton and Murray, 2021). Any project's sustainability depends on clear, valid, achievable, and measurable parameters (e.g., Lannon and Walsh, 2020; Sabrini et al., 2019) executed by dedicated human resources. Clear technical, logistical, and objectives are necessary for the successful execution of a project. Reliance on the local experiences and communities ensures the success of any project, while repudiating such potentials may lead to the breakdown of a project's objectives and achievements in the long term. Multi-stakeholder engagement in all phases of the project life cycle is recommended (Miković et al., 2020). Specific stakeholders may be marginalized from management decisions (Prell et al., 2009), but CSP successfully has included these groups since the beginning. CSP has progressively engaged local stakeholders in all phases by involving a diverse range of local and national stakeholders, primarily through forming village groups who have played a vital role in project successes so far.

CSP has endured several devastating droughts over the past decade. A single drought event could have been an ending point for any NRM project carried out in a dry climate with limited vegetation and water resources. While the project has succeeded under climatic challenges, it has suffered from different administrative shortfalls, from the project document to financial arrangements over the past decades. We showed that complicated national versus international financial agreements need careful and practical solutions in the log-run. In particular, the transparent and on-time delivery of financial agreements must be noted with high importance.

As an interface between the natural and social sciences, the project has acted as a catalyst to conceptualize natural resources management into a more vital applicable sphere of influence (livelihood). The earlier ecological concept of soil carbon enrichment has turned into a broader social concept to support local livelihoods and marginalized social groups, including local women. Globally, it is recommended to provide more project success evaluations and analyses (Todorović et al., 2015). Therefore, the presented lessons learned here can be considered for future endeavours to expand the scope of CSP and other similar community-based projects across the world.

The research faced limitations in accessing further information and data, interviews, or reports. It could benefit the context had the previous and current stakeholders been interviewed to provide another angle of the project's successes, challenges or failures. Although this research strived to recount all pivotal plans and activities that have been hampered, directly or indirectly, by stakeholders' decisions or the project document's failures, some may have been missed out.

Further scoping of such shortcomings could be facilitated by implementing interviews with stakeholders and revisiting earlier documents archived by the project offices.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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